

ABERCRAF WEIR MODIFICATIONS

**(More Fish / Boosting economic benefit)*

Abercraf weir used to be a 2 tiered structure with the upper tier being a later addition to the, much older, original structure below. In respect of fish passage, it has always been the upper tier that has presented the issue for fish migration with a 0.4m vertical face. Often both salmon and sea trout could be seen jumping on to the original weir face and swim directly into the vertical upper tier. High water velocity would then wash them back into the pool below.



Phase 1 site preparation



Post delivery

We have now managed to remove the upper tier. Strategic cutting and gentle

persuasion with a 360° excavator saw the whole section removed.

The modification now gives better access for fish to the upper reaches of the Tawe, this will hopefully mean healthier more sustainable fish populations returning to the river in future years. The focus is now on Pen-y-cae falls upstream, which we hope will improve fish passage as part of the same program of works. In combination, the 2 schemes will open up over 20km of prime spawning river!

This work has been delivered as part of the wider Salmon for Tomorrow (Eog at Yfory) project, which is funded by the European Fisheries Fund and the Welsh Assembly Government. The project will see more than £2.1m invested in sustaining Welsh fisheries through the rehabilitation of migration routes for species such as salmon, sea trout and eels. We will complete more than 23 easements and fish passes across Wales by December 2012.

Salmon were seen swimming over the weir as soon as the upper tier was removed! Fish that had built up below in previous weeks saw their opportunity and went for it straight away to much adulation by the contractors, Alun Griffith, and local members of the public. We have been working very closely with the local community as many identify with the structure as part of the village heritage, much care was taken not to affect the aesthetics of the site, while at the same time improving fish passability. We are confident that this balance has been achieved.

CONSTRUCTION OF PRE-BARRAGES TO IMPROVE FISH PASSAGE ON THE ANNELL

**(More Fish / Boosting economic benefit)*



Before



After

The Afon Annell is a substantial tributary located on the lower Tywi catchment flowing into the main River Tywi near Whitemill. The Tywi supports an internationally renowned rod fishery for salmon and sea trout and also a heritage net fishery in the tidal reaches. It is hoped that the Annell will now make an important contribution to fish populations.

Prior to the works, a farm access bridge on the Annell at Gilfach, posed a total barrier to salmon, sewin, brown trout and eels seeking to ascend the Annell to spawn. The bridge culvert is about forty years old and both the design and local geology has resulted in river bed erosion and drop in the downstream bed level (perching).

Under low flows, the total head difference was over 1.4m, too great for fish to pass upstream. The obstruction is likely to have been an important factor contributing to the reach being classified as 'moderate failure' under the Water Framework Directive (WFD).

The fish easement works delivered by Steve Carter (Sustainable Fisheries Project Officer) involved raising the downstream water level by means of 4 block stone pre-barrages constructed of 3 - 5 tonne blocks formed into an upstream crescent shape to centralise flow. Each weir incorporated a dropped stone in the centre to provide an obvious route for fish passage. All the material was sourced from local a quarry.

Together these weirs will be to raise the tail water by 1.0m, allowing fish to pass upstream without any hindrance. By improving connectivity to a network of smaller streams, juvenile habitat of approximately 8.5km has been made accessible.

PONT FLOCKSMAN AND PONT BREN TECHNICAL FISH EASEMENTS

**(More Fish / Boosting economic benefit)*



Technical easement on the confluence of the Pont Flocksman



Technical easement "in progress" on the confluence of the Pont Bren

We have also completed 2 technical fish easements on the confluence of streams at Pont Flocksman and Pont Bren. Both streams flow into the Clydach, a major spawning tributary of the Sawdde. In combination the 2 schemes open fish access to over 5km of what is the main spawning area of the Tywi.

The scheme at Pont Flocksman improves fish access to the whole of the Nant Maesadda sub-catchment. The bridge apron at the confluence with the Clydach was very steep (45°) and awkward for fish passage. We have modified the flow over the apron using chevron baffles to increase depth and slow water velocity. We have also trained the flow so all the water goes down the pass in all but the highest of flows.

The scheme at Pont Bren will improve fish access to the Nant Pant-glas. In this instance the solution was quite complex with the original structure presenting what could only be described as a "Krypton factor" obstacle for fish. An initial rock fall coupled with two flat level changes, then a 10m pipe culvert all conspired against effective fish passage into the tributary. The rock fall was formed into 2 informal pre-barrages and the level changes were flooded out with timber baulks with free gaps. Chevron baffles were then fixed within the pipe culvert. The result is a direct route for fish to access the tributary.



LLANWRDA FISH PASSAGE IMPROVEMENTS

**(More Fish / Boosting economic benefit)*



Before



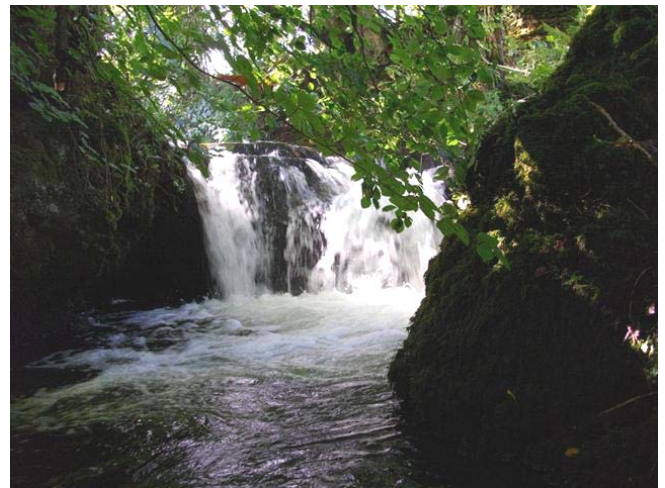
After

A weir structure on the Llanwrda Dulais, a tributary of the Tywi, has presented an obstruction to the migration of fish since its construction in the early 90's. In all but low flows the "free gap" intended for fish passage is inundated from 3 sides resulting in a potential velocity barrier very early in the flow range. In order to reduce water velocity and turbulence in the free gap, sidewall baffles were fixed on each side to prevent inundation from the sides and reduce flows by up to 40%.

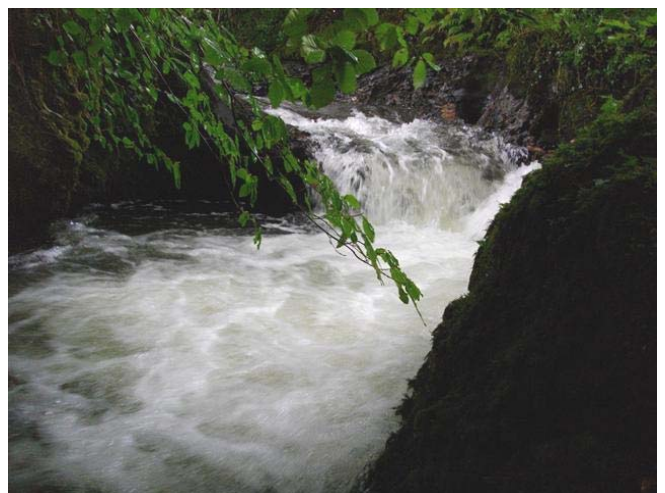
This work now improves fish access to >15km of spawning tributary. The Llanwrda Dulais has been an underperforming tributary in-terms of fish populations and it is hoped that this simple cost effective management action will allow better utilisation of the sub-catchment for fish spawning.

NANT RHAADR NATURAL FALLS MODIFICATION TO IMPROVE FISH PASSAGE

**(More Fish / Boosting economic benefit)*



Before



After



The natural falls on the lower Nant Rhaeadr presented a partial barrier for fish entering this tributary of the Tywi. Working with Carmarthenshire Rivers Trust we have recently modified the falls using an excavator mounted pecker to fracture the bed rock and lower the overall head difference from over 1m to 0.4m.

We have worked collaboratively on this scheme with the Carmarthenshire Rivers Trust who took the lead in delivery and were able to fund the work through the "Afonydd Sir Gaerfyrddin" project also funded by the European Fisheries Fund.

Natural obstructions do restrict movements of fish species such as salmon, sea trout, eels and Lamprey, **with** large sections of some catchments totally inaccessible for migratory fish. Where a natural structure is a total obstruction, Agency policy is not to improve conditions for fish passage as trout populations upstream will be genetically isolated, and may have developed unique characteristics.

However, where there is limited fish access under specific flows we can improve conditions for fish passage without adversely affecting trout populations.

Rivers Trusts share many of our own goals and aspirations and by working together we can share both good practice and technical expertise. This scheme affords better fish spawning opportunity to 8km of tributary in the upper Tywi catchment.

LOG JAM REMOVALS ON THE TEIFI CATCHMENT

**(More Fish / Boosting economic benefit)*



Camddwr log jam before



Camddwr log jam after



Large log jam on the Cych

Recent walkover surveys carried out by fisheries officers on the Teifi tributaries have been highlighting some large log jams that were significantly restricting migratory fish passage. Derek James, Eifion Davies, Antony Bevan, with the assistance of Steve Carter have all been involved in both identification and delivery of schemes to remove 3 large obstructions.

The 3 Jams identified on the Camddwr, Talog and Cych were all causing a considerable bed level rise above, collecting debris and were effectively "sealed" weirs obstructing fish migration.

Consultation with the Countryside Council for Wales confirmed that works could be undertaken after the bird breeding season, and sites was also checked for presence of otters.

Removal of the jams were undertaken by either our framework contractors, operations delivery team or our own fisheries officers depending upon the scale and availability at the time.

Removal of the obstructions now allows salmon, trout, eels, lamprey and bullheads to access the branching network of smaller tributaries totalling approximately 20km.

The main benefit being the restoring the connectivity to excellent spawning and juvenile habitat. This important work will help to ensure good ecological status for all the associated tributaries and water bodies by 2015, a key water framework directive target. There are currently moderate failures for salmon, trout and bullheads and it is very much hoped that this work will contribute to reaching our targets.

We worked collaboratively with the Teifi Rivers Trust on the Talog scheme where they employed the contractor and funded the work with our technical support.



All fish passage improvement works detailed have been delivered as part of the wider Salmon for Tomorrow (Eog at Yfory) project, which is funded by the European Fisheries Fund and the Welsh Assembly Government. The project will see more than £2.1m invested in sustaining Welsh fisheries through the rehabilitation of migration routes for species such as salmon, sea trout and eels. We will complete more than 23 easements and fish passes across Wales by December 2012.



GOOD ECOLOGICAL STATUS, WATER FRAMEWORK DIRECTIVE AND OUR MONITORING PROGRAM

**(More Fish)*



Delivery of monitoring program 2010/11

We have set out how waters will improve under measures described in the Western Wales river basin district under the Water Framework Directive. The Directive sets a target of aiming to achieve at least 'good status' in all waters.

The water bodies are classified using a number of criteria of which fisheries is an integral and important component. In many cases fisheries is the driving factor.

The WFD objectives are:

- Prevent deterioration in status for water bodies
- Aim to achieve good ecological status by 2015
- For water bodies that are designated as artificial or heavily modified, aim to achieve good ecological potential by 2015

In our Area the latest classification indicates we have 199 number of water bodies classified for fish. Of these 78 are achieving Good Ecological Status (GES), whilst 121 water bodies are not considered as achieving a good ecological standard.

We have drawn up plans to investigate the failures and address the issues and direct much of our work towards reaches that are currently not reaching good ecological status. This has become one of the main drivers of our work.

The annual fisheries monitoring programme helps us understand these and measure how we are progressing towards achieving good ecological status. During the winter months we will be undertaking 'Walkover' surveys identifying potential issues on our spawning streams; temporary blockages, barriers, pollution inputs and habitat issues.

Working with the Rivers Trusts to help train volunteers in the techniques used for walkovers, we aim to identify potential issues and target our restoration efforts together.



Juvenile trout being processed as part of our monitoring programme.

WORKING WITH PORTHCAWL ANGLING ASSOCIATION

**(More people fishing / Boosting social benefit)*



Fisheries officer Jerry Weeks with support from PAA put their best feet forward.

The Porthcawl Angling Association (PAA) recently made a request for assistance from the Environment Agency Fisheries Technical Team when vandals targeted their platforms at the 'Wilderness' Lake in Porthcawl. One platform at the fishery had been detached from its station, used as a make shift raft, then left abandoned on the far side of the lake.

Jerry Weeks (Fisheries Officer) was called in, and soon 'fixed it', with help from and Steve Carter (Fisheries Officer) and Howie Richards (PAA). The angling platform is now safely secured and ready for use once again by anglers.

The platforms were installed back in 2005 as part of a infrastructure project part funded by Environment Agency Wales and Wilderness Lakes have since been the focus for Angling Participation events for youngsters in the Porthcawl area.

PUDDLEDUCK FISHERY - OPEN DAY EVENT

**(More People Fishing)*



The official opening ceremony

New facilities at Puddleduck Fishery in Pembrokeshire were officially opened by Councillor John George, Chairman of Pembrokeshire County Council in a grand event in July.

We have been working together with Puddleduck Fishery in Pembrokeshire to develop the angling facility for the benefit of both local and visiting anglers of all ability. The new facilities at the fishery includes improved car park spaces designated for disabled anglers; pathways and ramps with surfaces and gradients that are suitable for all ability access; a large angling platform enabling all ability access to the fishery (constructed to British Disabled Angling Association standard).

Puddleduck Fishery is one of leading fisheries in West Wales promoting angling participation. Working with Pembrokeshire Federation of Angling coaches the fishery has hosted events during Pembrokeshire Fish Week and hosted junior angling participation events.



This has helped to establish links with local community clubs and organisations, such as the Scouts, and promote angling as a proactive inclusive sport to the local community.

It is hoped that the improved infrastructure and angling experience will also encourage use of the fishery by angling tourists and increase the economic benefits that angling tourism brings to the local community.

This scheme has been part funded by the EAW through the Sustainable Fisheries Programme supported financially by the Welsh Assembly Government.

Continued delivery of these types of schemes is very much dependant on the Welsh Assembly Government providing additional Grant in Aid for the Sustainable Fisheries Program. This is an excellent example of how the additional funding is invested in schemes that deliver both long term social and economic benefits for the local community.



All ability access at Puddleduck fishery.

PORT TALBOT DOCKS ANGLER ACCESS IMPROVEMENTS.

**(More people fishing / Boosting economic benefit)*



New facility at the docks

All ability angler access improvements have now been completed at Port Talbot docks coarse fishery. A number of large fishing platforms have now been finished increasing the fishery capacity and allowing more local and visiting anglers to fish the venue.

The docks fishery provides good quality fishing close to where a great deal of people live in Port Talbot and Aberafan, leading to social benefits. The quality of fishing also draws anglers from much further a field giving a boost to the local economy.

MANGEMENT OF THE BURRY INLET COCKLE FISHERY

**(More Fish / Boosting economic benefit)*



April 1st 2010 Environment Agency Wales were made Grantee of the Burry Inlet Cockle Regulating Order. This means that we took over the management of the Burry Inlet cockle fishery including licencing, monitoring and enforcement.

The fishery has suffered greatly in recent years from ongoing cockle mortalities and this has been reflected by the number of current licence holders; this year we have only issued 36 licences at a cost of £684 per annum. Historically cockle fishermen have been able to fish throughout the year but in recent years this has been dramatically reduced and fishermen find they can only gather cockle for a few months of the year.

In previous years the mortality has started end of May to early June, this year was no exception. Our monitoring confirmed the start of the mortality and working with the cockle industry and Countryside Council for Wales (CCW) we were able to make applications to the Welsh assembly Government (WAG) to temporarily amend or remove their byelaws which control minimum landing size and daily quota. This has enabled licence holders to gather

cockle before it dies whilst still retaining control of the cockle stocks and ensuring that the fishery is as sustainable as it can be.

To help advise and inform our management of the fishery, we have set up the Burry Inlet Management Advisory Group which consists of representatives from the cockle gatherers, processors, CCW, local authorities and ourselves. The group met for the first time in September and will meet on a regular basis during the year.

In December we will be hosting a stakeholder engagement exercise to help disseminate the latest information on the mortality investigations, the fishery management plan and the future management of the fishery.

FISHERIES ENFORCEMENT HEADLINES

**(More Fish / Boosting economic benefit)*



Dead otter as well as a dead salmon retrieved in an illegal gill net from the Teifi.

Illegal fishery activities continue to be a problem for the area. This not only causes an impact to our native fish stocks but can also have serious implications for the economy of the area, such as angling, tourism and other fisherman trades.



Arrests have been made, nets recovered containing not only dead Salmon but also a dead otter in one instance (see image overleaf). Further arrests involving the illegal sale of untagged Sea Trout have been made. If found guilty when they appear in court shortly, it will be the first successful case Nationally using these new by-laws.

Headlines:

- 3 men caught foul hooking on the Loughor
- 2 men caught "spearing" sea trout on the Nevern.
- 3 men caught illegally netting the Teifi
- 8 cockle gathers reported for taking undersized cockles from the Burry Inlet.

Through club bailiff training we are also forging closer liaison between our enforcement officers and anglers. We will continue to use an intelligence led approach, working with other enforcement bodies in our fight against wildlife crime. By increasing our media profile through coordinated press releases we will continue to raise awareness and the profile of fishery enforcement in Wales.



Remember to buy a rod licence before you go fishing

GIS MAPPING COLLABORATION WITH AFONYDD CYMRU

**(More Fish / Boosting economic benefit)*



Computer based GIS mapping tools are essential when planning and delivering improvement works on our rivers. They give a catchment perspective and also a clear context to the work you deliver. Moreover, good mapping allows you to identify some issues such as intensive agriculture from the comfort of your own desk. When surveying river reaches the GIS mapping tools allow a detailed record of sections that have been surveyed and in this way foster a strategic approach which is essential if we are to be effective in our work.

We are very fortunate in that we all have access to these mapping tools and often they are taken for granted. Software licences for Arcview packages and the OS baseline data is not cheap and volunteer organisations without funding would really struggle to get set up. For this reason the we and other public sector organisations have a "Pan Government Agreement" that allows for the sharing of our OS baseline data under schedule 2, end user licence.

In this particular case because we are actively involved in collaborative schemes with Afonydd Cymru and the individual trusts, we are able to share our baseline OS data. This work links with both riverine survey workshops and habitat improvement manual guide produced by the Wild Trout Trust with assistance from fisheries team in SW area.

It is hoped that the rivers Trusts can assist us in the delivery of walkover surveys planned for future years as part of our WFD duties.

LIMESTONESAND APPLICATION ON THE DOETHIE AND PYSGOTWR CATCHMENTS

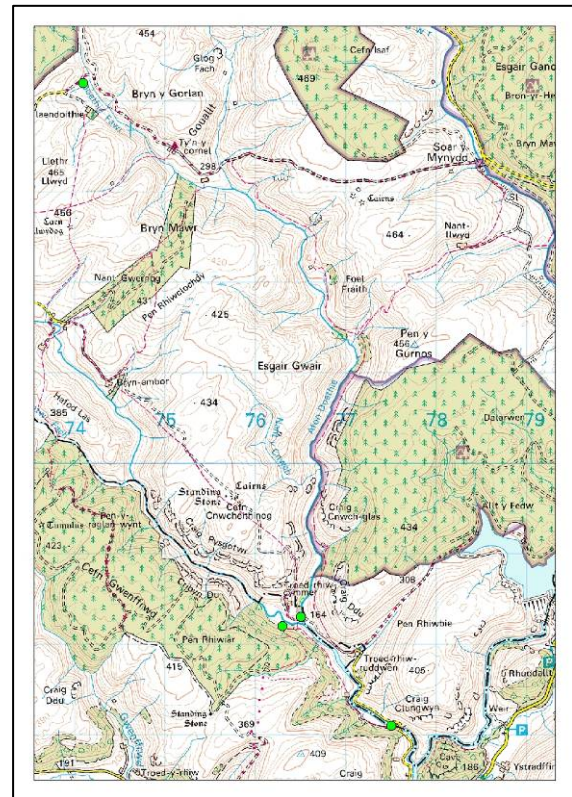
*(More Fish / Maximise economic benefit)



CRT and EAW staff getting "stuck in" to the delivery of limestone sand in 08/09.

The start of October saw volunteer support for the Carmarthenshire Rivers Trust mobilise to assist in delivery of limestone sand to 12 identified sites throughout both sub-catchments.

Some 68 tonnes of limestone sand have now been introduced into the Doethie and Pysgotwr catchments on the Tywi. The amplitude of episodic acidification should now be reduced and it is hoped that both invertebrate and fish population should now benefit contributing to an improved WFD ecological classification that currently is a moderate failing water body for fish.



Quantitative juvenile salmonid monitoring sites.

Baseline monitoring of fish stocks on the Doethie has been completed at 3 survey sites within the affected area prior to application of limestone sand. The locations of these survey sites are shown above. The results of the surveys suggest that fish stocks within both the Doethie and Pysgotwr catchments are relatively poor, although the Doethie generally performs better than the more heavily forested Pysgotwr. We hope to resurvey these sites next summer, following the successful applications of limestone sand this year.

GARW SPAWNING GRAVEL DELIVERY

*(More Fish / Maximise social benefit)



The 8th of October finally saw 80 tonnes of cleaned spawning gravel introduced into the spawning beds on the Garw river at Pont-y-cymmer. The work required co-operation of our operations delivery team, the fisheries technical team and a private partner in Derwen Aggregates who sort and clean the raw shoal material. This approach closes the loop and links our flood risk operations in the area with our fisheries work, a major step forward.

The 600 tonnes of raw shoal material was sorted and cleaned of fines by Derwen Aggregates at their Neath operation. 80 tonnes of the 20-50mm grade material (prime sea trout spawning substrate) was then separated and delivered to site at Pont-y-cymmer where our operations delivery team took over and introduced the material into the 6 beds.

The preparation of spawning beds is just in time for this years spawning activity. The next flood will redistribute the gravel within the beds and provide ideal conditions for the adult salmonids that will arrive as the flood water fines away.

Healthier more sustainable fish populations within the Garw river will afford more opportunity for local people to go fishing close to where they live and also make a contribution to the number of returning adult salmonids to the Ogmore catchment deriving both social and economic benefits.

For information on articles featured or other fisheries issues please contact:

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